



## 'Harassment Does Not Work Here,' New Policy States

BY RICH MCMANUS

Just days before NIH rolled out a comprehensive effort to define and address workplace harassment in all its forms, representatives of the National Academies of Sciences, Engineering and Medicine (NASEM) presented findings and recommendations of a NASEM report on sexual harassment of women in science to a large and keenly interested Lipsett Amphitheater audience.

Sitting in the front row were NIH director Dr. Francis Collins, who opened the 2-hour-plus session, and NIH principal deputy director Dr. Lawrence Tabak, who chairs NIH's intramural anti-harassment steering



Dr. Frazier Benya (l) and Tom Rudin of NASEM

committee, and acting chief of staff Dr. Carrie Wolinetz.

"This is an incredibly important topic and lots of things are happening right now," said Collins. "This has been on our minds for a long time. Sexual harassment is simply unacceptable."

Calling the NASEM report "quite thorough" and its conclusions "quite sobering," Collins added that "an

environment often perceived as hostile is not only utterly inappropriate but also has serious consequences," including some women actually quitting science at a time when it is already hard to recruit them.

"These are difficult topics to discuss," Collins allowed, "and that may have inhibited us in the past, but we're done with that... Harassment does not work here. We don't believe this is something we can tolerate."

The session, part of NCI's Center for Cancer Research Grand Rounds Lecture Series, included presentations by Dr. Frazier Benya, senior program officer for NASEM's committee on women in science, engineering and medicine, and Tom Rudin, director for NASEM's board on higher education and workforce.

"Like cancer, sexual harassment affects us all," said CCR director Dr. Tom Misteli, in prepared remarks (he was home sick, "a victim of biology") "and we need to resolve

SEE HARASSMENT, PAGE 6

## TOUGH ON TOBACCO

### Samet Recounts Progress Toward Eradicating Smoking

BY DANA TALESNIK



Dr. Jonathan Samet

Decades of research on the health risks of cigarette smoking have really cleared the air, prompting a dramatic, steady decline in tobacco use. Yet despite the plethora of indisputable evidence, millions of Americans still smoke.

"With no smoking [allowed] indoors, you walk by bars and restaurants and outside...people, who are probably well educated, are smoking or they're vaping. It's amazing, isn't it?" said Dr. Jonathan Samet,

SEE SMOKING, PAGE 4



Getting into the spirit of the kickoff were (from l) NCATS director Dr. Christopher Austin, NCATS Executive Officer Keith Lamirande, John F. Kennedy Center for the Performing Arts President Deborah Rutter and NIH director Dr. Francis Collins.

## 'Sound Health,' Community Spirit Inspire CFC Kickoff

BY TIM EVANS

A large and enthusiastic crowd gathered under a tent in front of Bldg. 1 on Oct. 9 to kick off the 2018 Combined Federal Campaign (CFC). Led this year by NCATS,

SEE CFC KICKOFF, PAGE 8



Smashing pumpkins at NIH? Not quite. See p. 2.

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## NIH Veterans Day Celebration, Nov. 7

All are invited to this year's celebration of Veterans Day, which will be held on Wednesday, Nov. 7 in Masur Auditorium, Bldg. 10, from 10 to 11 a.m.

The keynote speaker is U.S. Navy Capt. (ret.) Pius Aiyelawo, chief operating officer of the Clinical Center. Welcoming remarks will be delivered by U.S. Army Lt. Col. (ret.) Cathy Troutman, management analyst at NHLBI. Additionally, a veterans recognition address will be delivered by NIH principal deputy director Dr. Lawrence Tabak.

Sign language interpreters will be provided. Individuals who need reasonable accommodation to participate should contact Jayne Lura-Brown at [luraj@de45.nidr.nih.gov](mailto:luraj@de45.nidr.nih.gov) or (301) 594-5342 and/or the Federal Relay (1-800-877-8339).

## Community College Day Set, Nov. 20

The NIH Office of Intramural Training & Education will host Community College Day 2018. This event provides community college students and faculty an opportunity to visit the Bethesda campus and learn about careers and training opportunities in biomedical and health care fields. The all-day event will take place on Tuesday, Nov. 20 from 8 a.m. to 4 p.m. at Natcher Conference Center. To register and for more information visit [www.training.nih.gov](http://www.training.nih.gov).

Nov. 14

## Chen To Speak in NLM Series

The NLM Informatics and Data Science Lecture Series will feature Dr. Elizabeth Chen on Wednesday, Nov.

14 from 2 to 3 p.m. in Bldg. 45, balcony A. She will address "Knowledge Discovery in Clinical and Biomedical Data: Case Studies in Pediatrics and Mental Health."

Chen is founding associate director of the Brown Center for Biomedical Informatics, associate professor of medical science and associate professor of health services, policy & practice at Brown University.

The talk will be broadcast live and archived at <http://videocast.nih.gov/>.

Interpreting services are available upon request. Individuals who need reasonable accommodation to participate should contact Ebony Hughes, (301) 451-8038, [Ebony.Hughes@nih.gov](mailto:Ebony.Hughes@nih.gov) or the Federal Relay (1-800-877-8339).



Dr. Elizabeth Chen



## Mushrooms 'n Monarchs Visit Campus

There was recently a bumper crop of bright orange mushrooms that popped up next to a black gum tree on the west side of Bldg. 37, close to the Old Georgetown Rd./South Dr. exit. "They appear to be jack-o'-lantern mushrooms," said NCI's Marian Durkin. "I took one into a darkroom and can confirm that they are bioluminescent. Also, I have seen a number of monarch butterflies flitting around the butterfly bushes next to the Bldg. 49 entrance and on the west side of Bldg. 35, close to the sidewalk." Such early fall visitors are welcome, despite their lack of PIV cards.

PHOTOS: MARIAN DURKIN



## CDC Director To Present on Infectious Harms of Opioid Crisis

Dr. Robert Redfield, director of the Centers for Disease Control and Prevention, will deliver the 2018 Joseph J. Kinyoun Memorial Lecture on the intersection between the national opioid crisis and the management of infectious diseases. The NIH community and the public are invited to hear his remarks on Tuesday, Nov. 13, at 3 p.m. in Lipsett Amphitheater, Bldg. 10.

Titled, "Opioids: Epidemic of Our Time and Impact on Infectious Disease," Redfield's talk will explore the impacts of the unprecedented use of opioids in the United States on the management of infectious diseases. While overdose remains the leading cause of death among people who use opioids, this population is also disproportionately affected by viral hepatitis, bacterial endocarditis, HIV and other infections associated with sharing and reusing needles to



Dr. Robert Redfield

inject drugs and other behaviors linked to illicit drug use.

The opioid epidemic presents substantial challenges to controlling infectious disease transmission. In the United States, new hepatitis C infections increased by 223 percent from 2010 to 2016, and one in 10 new HIV infections occurs in people who inject drugs. Redfield will discuss the roles that federal public health partners including CDC and NIH can play in addressing this crisis.

Redfield became the 18th CDC director and the administrator of the Agency for Toxic Substances and Disease Registry in March 2018, capping more than three decades of leadership in public health, research and clinical care with a focus in virology.

After receiving his medical degree from Georgetown University in 1977, Redfield rose to the rank of colonel at Walter Reed Army Medical Center, where he led some of the earliest clinical studies enrolling people with AIDS. He later became a co-founder of the University of Maryland's Institute of Human Virology.

The annual Kinyoun Lecture commemorates Dr. Joseph J. Kinyoun who, in 1887, founded the Laboratory of Hygiene, the institution that later would become NIH. Since 1979, the National Institute of Allergy and Infectious Diseases has invited distinguished guests to present their work in the fields of infectious diseases and immunology for this lectureship.

## Biowulf: NIH's Top-Ranking Supercomputer

Before entering the NIH Data Center in Bldg. 12, each visitor is given a pair of earplugs to drown out the whirl of Biowulf, NIH's state-of-the-art supercomputer, and its enormous cooling system. The supercomputer enables scientists in the NIH Intramural Research Program (IRP) to analyze massive datasets and attempt projects whose sheer scale would make them otherwise impossible.

Biowulf is a massive upgrade from NIH's first supercomputer, the Cray X-MP/22, which NIH researchers used from 1986 to 1992. The Cray was used to study molecular structures and conduct image processing, statistical analysis and basic DNA sequencing. Biowulf came online in 1999 as a response to the exponential increase in the size of scientific datasets in fields such as biochemistry, microbiology and genomics that occurred in the 1990s. Datasets have grown even more since then.

To meet the demands of modern biomedical research, NIH embarked on a 5-year initiative in 2014 to enhance Biowulf's already considerable computing power. Four years into the endeavor, the supercomputing system has become a world-class resource that is currently used by more than a third of all IRP research labs at NIH.

"We're extremely encouraged by the number of researchers who want to use Biowulf," said Dr. Andy Baxeavanis, director of computational biology for the IRP. "High-performance computing is a critical element of modern-day biomedical



The state-of-the-art supercomputer Biowulf uses a massive cooling system to keep its 99,000 cores at the appropriate temperature.

PHOTO: BEN CHAMBERS

research and Biowulf is uniquely positioned to help members of the IRP tackle crucial research questions that were previously beyond our reach."

The system consists of 99,000 computational cores. Each core can independently run program code, allowing researchers to process a large number of simultaneous jobs and large-scale memory tasks. Biowulf also provides 25 petabytes of primary storage, which is enough to store the information found on over 5.5 million DVDs.

That computing power has enabled IRP researchers to publish more than 2,100 research papers based on data that was generated or analyzed using Biowulf, with topics ranging from how the time of day affects the brain's water content to how genes influence sleep duration in fruit flies. Overall, 30 percent of Biowulf's computing

power is used for computational chemistry, 20 percent for genomics, 26 percent for processing and analyzing images and the remainder distributed across dozens of other fields of biomedical inquiry.

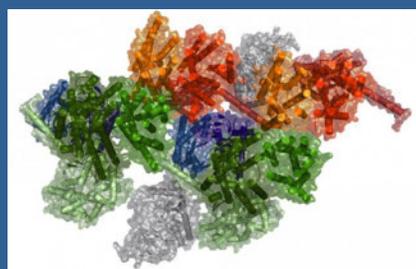
Published researchers at NIH aren't the only people to recognize Biowulf's noteworthy capabilities. The TOP500 project

continues to rank Biowulf in the top 100 of the most powerful supercomputers in the world. Moreover, the HPC team was given the NIH Director's Award in 2017 in recognition of its work.

"Biowulf enables intramural researchers to make biomedical discoveries," said Andrea Norris, director of CIT and chief information officer at NIH. "I expect its important computational offerings will continue to be heavily used by IRP researchers."

The final phase of the expansion effort will add approximately 30,000 computational cores to the supercomputer and will come online in July 2019.

For more information on Biowulf, visit [hpc.nih.gov](http://hpc.nih.gov), contact [staff@hpc.nih.gov](mailto:staff@hpc.nih.gov) or attend one of the HPC team's coffee shop consultations on campus.—John Hotka 



ON THE COVER: *Computational model of a macromolecular complex. NIDA scientists have discovered macromolecular complexes that could enable medication development. The study changes long-held concepts of cell decoding.*

IMAGE: SERGI FERRE, NIDA

### The NIH Record

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National Institutes of Health  
Turning Discovery Into Health

## Smoking

CONTINUED FROM PAGE 1

a pulmonary physician who is dean of the Colorado School of Public Health. He spoke recently in Natcher Bldg. at the fifth in a series of lectures celebrating NHLBI's 70th anniversary.

Over the last century, adult cigarette consumption rose steadily, then began a consistent decline in the early 1960s, as successive studies linked cigarette smoking to heart disease, chronic respiratory diseases, lung cancer and to rising mortality rates.

"I think critical in shaping those research directions has been NHLBI, in terms of this volume of science and targeting critical issues and making sure the right answers were coming forth," said Samet. Progress was bolstered nearly 50 years ago when the lung division was added to what was then called the National Heart Institute.

But now a new phenomenon is complicating the current smoky landscape—the popularity of e-cigarettes, particularly among teens and young adults. So much remains unknown about the respiratory and other effects of the toxic chemicals in these e-liquids.

"If a child starts using e-cigarettes while the lungs are still developing and growing—at age 13, 14 or 15, inhaling this vapor, what are the risks?" asked Samet.

E-cigarettes typically contain fewer toxicants and should reduce the disease risk for cigarette smokers who switch to them, but they renormalize nicotine, warned Samet. Nothing, of course, reduces the health risks more than complete smoking cessation.

"It's a complicated risk trade-off between adults and children," said Samet. "How many children is it okay to start being exposed to nicotine to protect one 60-year-old smoker? My answer is no children and that's where we need comprehensive policy."

In today's fast-paced world, where social media is instant, we need to circulate information much quicker than in the time it takes to publish results from a protracted study, Samet said in a post-lecture discussion with Dr. James Kiley, director of NHLBI's Division of Lung Diseases.

"This is not just the old tobacco epidemic; that was easy," said Samet. "A brand got rolled out, came on the market, mostly stayed on the market." Now, makers of

e-cigarettes keep changing how and what chemicals they deliver, said Samet, so we need real-time information targeting vulnerable populations about short-term and cumulative effects.

Back when conventional cigarette smoking hit its peak, around 1960, the average sales across all adults was more than 4,000 cigarettes annually, or more than 200 packs per year. In those days, many smoked a pack a day or more. Marketing tactics then often blew smoke, said Samet, as the tobacco industry tried to undermine the science. These tactics continue today, but conventional cigarettes have not become safer, Samet emphasized.

A major turning point in the war on smoking came with the first surgeon general's report in 1964 that compiled thousands of studies on the toxic health effects of cigarettes. The report's release coincided with a national downturn in cigarette consumption.

"I think it represents one of the first examples of a true comprehensive, systematic review," said Samet.

Successive surgeon general reports would update the health consequences, including a 1984 report that identified cigarette smoking as the major cause of chronic obstructive pulmonary disease in American men and women. Samet began contributing to the surgeon general's reports that year.

"They're a great example of science policy translation," he said. "Pull all the evidence together, review it and come to conclusions that mean something."

The 50th anniversary surgeon general's report in 2014 was triple the size of the first report.

"In terms of the need to not smoke for the health of the lung, we have an incredible foundation," said Samet. The 2014 report connected smoking not only with a vast number of respiratory outcomes, but also with other chronic diseases including rheumatoid arthritis and diabetes.



Samet (r) participates in discussion with Dr. James Kiley, director of NHLBI's Division of Lung Diseases.

PHOTOS: CHIA-CHI CHARLIE CHANG

An ongoing challenge in battling the smoking epidemic, Samet said, is addressing health disparities—by education, socio-economic indicators, racial and ethnic populations and other susceptible populations such as the mentally ill—that drive different mortality patterns across the country.

As individual and population studies continue, "I would say who's at risk goes beyond susceptibility; [consider] who's being marketed to," said Samet. Trying to prevent smoking-related diseases, he concluded, "will be the never-ending story."

But that story could end, he admitted, if cigarette consumption one day goes down to zero. "That's what we're aiming for." **R**

## VOLUNTEERS

### Healthy Volunteers Needed for Vaccine Study

Vaccine Research Center researchers seek healthy volunteers, 18-70 years old, for an investigational influenza vaccine study. Scientists are testing new vaccines to determine if they are safe and effective in preventing the flu. Compensation is provided. For more information, call 1-866-833-5433 or email [vaccines@nih.gov](mailto:vaccines@nih.gov). Read more online at <https://go.usa.gov/xNH7U>. Refer to study VRC 316.

## Lee To Present NINR Director's Lecture

On Wednesday, Nov. 14, Dr. Christopher Lee will present the fourth 2018 NINR Director's Lecture, from 2 to 3 p.m. in Lipsett Amphitheater, Bldg. 10. In his presentation, "Integrative Biobehavioral Research in Heart Failure," Lee will describe his career trajectory and current program of research, which focuses on symptom science. The lecture will be followed by an opportunity for questions and discussion.



Lee is professor and associate dean for research at Boston College's Connell School of Nursing. His research in heart failure is focused on symptom science and patients' response to symptoms when they occur. His innovative approach to research that he calls "biobehavioral profiling" reflects a deep understanding of biological underpinnings of symptomatology as well as contemporary knowledge of advanced statistical techniques that he employs to disentangle heterogeneous responses to heart failure and its therapies.

The NINR Director's Lecture Series is designed to bring the nation's top nurse scientists to campus to share their work and interests with a transdisciplinary audience. The event is free and open to the public. For more information and to register, visit [www.ninr.nih.gov/directorslecture](http://www.ninr.nih.gov/directorslecture).

## NIH Celebrates 'America Recycles Day'

America Recycles Day (ARD) is Thursday, Nov. 15. The Division of Environmental Protection will partner with the ORS Division of Logistics Services, sustainable lab practices working group, green team leads council and sustainability partners to host information and recycling activities Monday, Nov. 12 through Friday, Nov. 16.

ARD is a nationwide endeavor to celebrate recycling efforts and promote recycling initiatives. Stop by an information table from 11 a.m. to 2 p.m. on Nov. 15 to take the NIH Recycling Pledge, ask questions, get individual recycling bins and pick up recycling information at the following cafeteria locations: Bldgs. 10 (B1 and 2nd floor), 31, 35, 38 and 45.

Containers will be located in the lobbies of Bldgs. 1, 10 South, 13, 31A, 35, 38A, 40, 45 and 50 to collect non-accountable items (e.g., electronics, floppy disks, CDs, cords, microwaves, coffee makers, monitor stands, metal staplers, hole punchers) from the beginning of ARD week until Friday at 2 p.m. In addition, staff can now recycle plastic film (Ziploc bags, grocery bags, dry cleaning bags, shrink wrap, bubble wrap) in the Bldg. 10 Supply Store during ARD and beyond.

The Shady Grove, Baltimore and Research Triangle Park campuses will also host activities. For more information, email 2018 ARD coordinator Jaqie McGauley ([jacquelyn.mcgale@nih.gov](mailto:jacquelyn.mcgale@nih.gov)).

## CROSSWALK CONSTRUCTION

### Pedestrian Safety Improvements Continue on Campus

NIH has made significant strides to create a safer Bethesda campus for pedestrians. Progress includes the addition of 20 LED-lit crosswalks under construction or already in operation. Over the next 12 months, new safety improvements are planned at several more intersections.

The next major improvement will include the intersection of Memorial Dr. and Center Dr., near the northeast corner of the Clinical Research Center. The reconfigured intersection will improve vehicle, bicycle and pedestrian safety.

In addition to intersection improvements, the heavily used walkway in front of Bldg. 31A will be replaced. A new accessible walkway has been designed to reduce the steepness of the walk while maintaining existing healthy trees. A retaining wall will be required to accommodate elevation changes and a new pedestrian-activated LED-lit crosswalk and flashing warning signs will be installed across Center Dr. During approximately 30 days of construction, pedestrians will need to follow a detoured path.

Even though these improvements will help NIH become a safer campus for all, they don't replace the need to follow the rules of the road. NIH follows Maryland state and Montgomery County laws as they pertain to pedestrian right-of-way.

At a crosswalk, in most situations, the pedestrian has the right-of-way and a vehicle should come to a complete stop while a pedestrian is crossing or approaching the roadway. However, responsibility is not all on the driver. Maryland code also states "...a pedestrian may not suddenly leave a curb...and walk into the path of a vehicle that is so close that it is impossible for the driver to yield" safely. Also, no bike or other vehicle may pass another vehicle stopped to let a pedestrian cross the roadway.

Installation of these improvements will begin in November. No road closures are expected. Lane closures are limited to nights and weekends and one lane of traffic will be open at all times. Michael Oppelt, the Office of Research Facilities project officer overseeing installation, can be reached at [michael.oppelt@nih.gov](mailto:michael.oppelt@nih.gov) or (301) 435-7827.



Shown above as it's configured currently, the intersection of Memorial Dr. and Center Dr., near the northeast corner of the Clinical Research Center will undergo renovation. Below is a rendering of its future look.





On hand at the 2-hour-plus session were (from l) Benya, NIH director Dr. Francis Collins, Civil Program supervisor Jessica Hawkins and NIDCR's Dr. Kelly Ten Hagen.

“Twenty to 50 percent of students feel it from faculty and staff.”

Gender harassment is significantly higher in medical school settings, Benya reported, nearly triple the frequency found in the sciences and almost double the frequency found in engineering.

“Women of color

## Harassment

CONTINUED FROM PAGE 1

it together...We need to change the culture so that complete absence [of sexual harassment] should be the norm.”

Rudin, who 38 years ago was an intern at NIH, said his committee has been working

- The cumulative effect is significantly damaging to science.
- The legal system alone is not adequate to address the issue.
- System-wide changes are needed. “Institutions can do it,” she declared. She outlined three kinds of sexual harassment defined in the NASEM report.



***“We always ask, ‘Who’s trying hard to solve the problem’ and we point to [NIH]. You’re taking this extremely seriously... Sexual harassment can be reduced. It can be stopped, and we know how to do it.”***

-TOM RUDIN



for 20 years on the challenges facing women in STEM careers. “We always talked about sexual harassment, but kind of put it aside.”

Two years ago, NASEM looked at it more explicitly; he and Benya are now touring the U.S., mainly college campuses, sharing study results.

“We always ask, ‘Who’s trying hard to solve the problem,’” said Rudin, “and we point to [NIH]. You’re taking this extremely seriously...Sexual harassment can be reduced. It can be stopped, and we know how to do it. But it needs will, incentives and encouragement.”

Benya said that in fall 2016, NASEM set out to review the prevalence of sexual harassment in STEM fields, assess its impacts and define policies found most successful in addressing and preventing it.

Four broad themes emerged:

- Gender harassment is a type of sexual harassment.

- Sexual coercion, or “Sleep with me or you’re fired.” This is the rarest form.
- Unwanted sexual attention, which can be as extreme as assault.
- Gender harassment. “This is the most common form,” Benya said. “It can include verbal and visible conduct...It demeans, denigrates and humiliates people, in gender-based ways.”

Thirty years of research have demonstrated that “sexual harassment can be direct or ambient—it’s harmful in both cases,” said Benya. “It takes a toll on victims.

“Fifty percent of women in science experience gender harassment,” said Benya.

experience more harassment than white men, white women and men of color,” Benya noted, “and it often includes racial harassment.”

The impact of harassment on victims’ health includes depression, stress, anxiety, headaches, sleep problems and other ailments. “One in 5 sexually harassed women meet the criteria for depression,” Benya said.

Sexual harassment derails women’s work lives, she explained. Many disengage from work or leave their profession. “All of this, to escape an abusive situation.”

One need not be directly targeted to feel the effects of sexual harassment; there is a circle of influence, or bystander effect, that spreads, Benya said.

“Even the men leave—they don’t stick around to watch their valued colleagues suffer.”

The cumulative effect is significant damage to research integrity and costly loss of talent in academic science and medicine, said Benya. NASEM’s committee on women in science believes sexual harassment should be considered on par with research misconduct.

Legal strictures on sexual harassment are necessary, but not sufficient, said Benya. “They are often symbolic only” and crafted so that institutions avoid liability.

“Targets do worry about retaliation,” she emphasized. “Many just want the behavior to end. They don’t want to go through the

### NIH Anti-Harassment Program

NIH has launched an Anti-Harassment Program for NIH staff that includes two new policies, a new educational video, a new web form and hotline for reporting allegations of harassment, and information about the upcoming workplace climate and harassment survey that will be administered in early 2019.

Learn more at <https://hr.nih.gov/working-nih/civil>.



Dr. Carrie Wolinetz (r), acting chief of staff, speaks as NCI's Dr. Brunilde Gril looks on.

court system...Actually, the least common response is to formally report the sexual harassment.

“We need to move away from a culture of compliance to one of respect,” said Benya. “We need to stop relying exclusively on formal reports.”

NASEM found that two factors are most associated with sexual harassment: male-dominated environments and leadership and a climate that tolerates sexual harassment.

“Climate is the greatest predictor of sexual harassment,” said Benya. What



***“Sexual harassment can be direct or ambient—it’s harmful in both cases. It takes a toll on victims.”***

—DR. FRAZIER BENYA



makes a permissive climate? First, the risk to victims of reporting. Second, a lack of sanctions. Third, a fear that you won’t be taken seriously.

She concluded with NASEM’s six key recommendations for academia:

- Create diverse, inclusive and respectful environments.
- Diffuse hierarchical and dependent relationships between trainees and faculty.
- Provide support for targets that doesn’t depend on filing a formal report.
- Improve transparency and accountability. “We need clear policies and disciplinary steps, and annual reports that include investigative results—what action was taken?”

said Benya, who noted that the NASEM committee also called for climate surveys (NIH is doing that, starting in January).

- Strive for strong and diverse leadership; make preventing sexual harassment an explicit goal.
- Make the entire academic community responsible for reducing and preventing sexual harassment.

The NASEM study committee also had recommendations for professional societies, policy makers and federal agencies.

The second hour of the program featured a panel discussion among members of NIH’s various women scientist advisory committees, OD offices dealing with human relations issues, plus a Q&A session with the audience. Key takeaways included:

- Dr. Kelly Ten Hagen of NIDCR called for four specific elements in an NIH intramural anti-harassment plan: clear definition of what constitutes “consensual relationship,” centralized reporting and investigating to avoid conflict of interest, an anonymous hotline for information and reporting (which has been adopted by NIH, according to Jessica Hawkins, supervisor of the NIH Civil Program) and involving the Office of Intramural Training and Education in protecting “our most vulnerable population—young trainees...A lot of behavior is not sexual,” Ten Hagen said, “but is nonetheless hostile and harmful.”

- Employees will have to take annual POSH (prevention of sexual harassment) training, said Hawkins. “You can’t opt out of this issue—it involves everyone.”

• Over the last year, the Civil Program has seen significantly increased reporting of workplace concerns, including harassment.

• Multiple mentors are crucial in a field where so much power can be concentrated in a single individual, argued several people.

• Men need to be made to feel comfortable about addressing these issues.

• Harassment can feel like “death by a thousand cuts”—there is often not a single, obvious “reportable” offense.

• Elite institutions can unwittingly accept abusive behavior from a famous or unusually productive scientist that wouldn’t ordinarily be tolerated from someone less professionally esteemed.

• Poor anti-sexual harassment training is worse than no training at all, concluded NASEM’s Rudin. **B**

## NINR ‘Boot Camp’ Features Precision Health

The National Institute of Nursing Research recently hosted its annual Methodologies Boot Camp. This year’s theme focused on digital health data and technologies that enable “smart health” and improve patient outcomes.

One-hundred seventy-five graduate students, faculty and clinicians participated in the “Precision Health: Smart Technologies, Smart Health” boot camp. Interest in the theme ran high, with registration reaching capacity in less than a day.



Dr. Ann Cashion speaks at NINR’s 2018 boot camp.

PHOTO: MENA BRUNETTE

The week-long training started with a symposium and poster session highlighting the contributions of nursing science in promoting precision and digital health. Dr. Ann Cashion, acting director of NINR, opened the symposium by welcoming attendees and giving an overview of NINR’s intramural research program as a “focal center for NINR’s commitment to training the next generation of nurse scientists.”

The symposium, which was open to the public and broader scientific community, featured three presentations including: “Biomarkers of Traumatic Brain Injuries and Concussions,” by Dr. Jessica Gill, Lasker clinical research scholar and principal investigator in NINR’s brain injury unit; “Making a Difference with Patient-Facing Technology,” by Dr. Donna Berry, nurse scientist, Phyllis F. Cantor Center for Research in Nursing & Patient Care Services, Dana-Farber Cancer Institute and affiliate professor at the University of Washington; and “Self-Monitoring of Diet and Exercise in Behavioral Weight Loss Interventions: From Paper to Electronic Diaries,” by Dr. Lora Burke, professor, epidemiology health & community systems, University of Pittsburgh School of Nursing.

To view the videocast of the symposium, visit <https://videocast.nih.gov/launch.asp?24004>.

For more information about the event, visit [www.ninr.nih.gov/bootcamp](http://www.ninr.nih.gov/bootcamp).—Diana Finegold



Austin (l) and colleagues (from l) Dr. Christine Colvis, Cindy McConnell and Lamirande sing the anthem.

## CFC Kickoff

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the campaign has a goal to “Show Some Love” by meeting or ideally exceeding \$2.2 million in fundraising from NIH.

The event kicked off on a patriotic note as NCATS director Dr. Christopher Austin and colleagues Dr. Christine Colvis, Keith Lamirande and Cindy McConnell performed an *a cappella* version of *The Star-Spangled Banner* as the colors were presented by the St. John’s College High School color guard.

“The campaign theme of ‘Show Some Love’ is, in essence, our call to action to support the causes and organizations that we care about most passionately,” said Austin. “I am excited to be leading the campaign, especially because of the NIH community, which has a strong CFC tradition. NIH employees give generously, and together we have raised more than \$2 million each year for the past 13 years.”

In the balmy early October sun, attendees sampled fare from local food trucks and vendors and visited with representatives from more than 30 organizations that will benefit from CFC giving. In all, more than 8,000 organizations are included in the online CFC catalog. NIH employees can donate to the campaign by visiting [cfc.nih.gov](http://cfc.nih.gov).

“I always look forward to getting the annual CFC started with a bang,” said NIH director Dr. Francis Collins, who is co-hosting the 2018 campaign with Austin. “The Washington capital region is the biggest contributor to the national campaign and NIH is the biggest contributor to the Washington capital region, so we are the center of the center of the best.”

Collins also encouraged attendees to give early and often. “Don’t wait until the last minute to contribute! You always freak us out, wondering if we’re going to hit the goal. Please—you can give anytime!”

Attendees also heard words of inspiration from special guest Deborah Rutter, president of the John F. Kennedy Center for the Performing Arts.

“Philanthropy is about partnership,” she said. “Philanthropy is about citizenship. We live in a very sacred place, and that’s why it’s so important that we come together and give. And individual giving is so important, because it’s about making a huge connection to our community.”

NIH and the Kennedy Center, in association with the National Endowment for the Arts, are partners in the Sound Health initiative, which is designed to explore the connections between music, health and wellness.

“There is still so much that is unknown about how music is processed by our brains, how it might impact human development and how, in some cases, it might be used as a medical intervention for patients with a variety of conditions,” Lamirande said.

Rutter, who said she “lives in the land of Kennedy quotes,” thought this one from the 35th U.S. President to be most fitting in the spirit of the CFC: “I am certain that after the dust of centuries has passed over our cities, we, too, will be remembered not for victories or defeats in battle or in politics, but for our contribution to the human spirit.”



Attendees visit with CFC charity representatives.

PHOTOS: MARLEEN VAN DEN NESTE

## Scientists Develop Novel Vaccine for Lassa Fever, Rabies

A novel vaccine designed to protect people from both Lassa fever and rabies showed promise in preclinical testing, according to new research published in *Nature Communications*.

The investigational vaccine, called LASSARAB, was developed and tested by scientists at Thomas

Jefferson University in Philadelphia; the University of Minho in Braga, Portugal; the University of California, San Diego; and NIAID.

The inactivated recombinant vaccine candidate uses a weakened rabies virus vector, or carrier. The research team inserted genetic material from Lassa virus into the rabies virus vector so the vaccine expresses surface proteins from both the Lassa virus and the rabies virus. These surface proteins prompt an immune response against both Lassa and rabies viruses. The recombinant vaccine was then inactivated to “kill” the live rabies virus used to make the carrier.

There are currently no approved Lassa fever vaccines. Although Lassa fever is often a mild illness, some people experience serious symptoms, such as hemorrhage (severe bleeding) and shock. The overall Lassa virus infection case-fatality rate is about 1 percent, according to the World Health Organization, but that rate rises to 15 percent for patients hospitalized with severe cases of Lassa fever.

People contract Lassa virus through contact with infected *Mastomys* rats and through exposure to an infected person’s bodily fluids. Lassa fever is endemic to West Africa where these rats are common. In 2018, Nigeria experienced its largest-ever Lassa fever outbreak, with 514 confirmed cases and 134 deaths from Jan. 1 through Sept. 30, according to the Nigeria Centre for Disease Control.

Africa is also at high risk for human rabies. The WHO estimates that 95 percent of the estimated 59,000 human rabies deaths per year occur in Africa and Asia. Nearly all human rabies deaths are caused by bites or scratches from infected dogs. Effective rabies vaccines and post-exposure shots are available, but many deaths still occur in resource-limited countries, according to the Centers for Disease Control and Prevention.



A vaccine designed to protect people from both Lassa fever and rabies showed promise in preclinical testing.

PHOTO: NIAID

## Study Identifies Gene That Makes Gentle Touch Painful After Injury

Ever wonder why things that normally feel gentle, like putting on soft shirts, are painful after a sunburn? In a study of four patients with a rare genetic disorder, NIH researchers found that PIEZO2, a gene previously shown to control our sense of our bodies in space and gentle touch, may also be responsible for tactile allodynia: the skin’s reaction to injury that makes normally gentle touches feel painful.

This and a second NIH-funded study, both published in *Science Translational Medicine*, used mice to show how the gene may play an essential role in the nervous system’s reaction to injury and inflammation, making PIEZO2 a target for developing precise treatments for relieving the pain caused by cuts, burns and other skin injuries.



NIH researchers found that a gene previously shown to control our sense of our bodies in space may also be responsible for tactile allodynia, the skin’s reaction to injury that makes normally gentle touches feel painful.

IMAGE: STEVE DEBENPORT/GETTY

“For years scientists have been trying to solve the mystery of how gentle touch becomes painful,” said Dr. Alexander Chesler, a Stadtman investigator at NCCIH and a senior author of one of the studies. “These results suggest PIEZO2 is the gene for tactile allodynia. We hope that these results will help researchers develop better treatments for managing this form of pain.”

The PIEZO2 gene encodes what scientists call a mechanosensitive protein that produces electrical nerve signals in response to changes in cell shape, such as when skin cells and neurons of the hand are pressed against a table. Since its discovery in mice by a team led by Dr. Ardem Patapoutian of Scripps Research, La Jolla, the lead author of the second paper, scientists have proposed that PIEZO2 plays an important role in touch and pain in humans.

## Gene Mutation Points to New Way to Fight Diabetes, Obesity, Heart Disease

Researchers say they have discovered a gene mutation that slows the metabolism of sugar in the gut, giving people who have the mutation

a distinct advantage over those who do not. Those with the mutation have a lower risk of diabetes, obesity, heart failure and even death. The researchers say their finding could provide the basis for drug therapies that could mimic the workings of this gene mutation, offering a potential benefit for the millions of people who suffer with diabetes, heart disease and obesity.

The study, which is largely supported by NHLBI, appeared in the *Journal of the American College of Cardiology*.

“We’re excited about this study because it helps clarify the link between what we eat, what we absorb and our risk for disease. Knowing this opens the door to improved therapies for cardiometabolic disease,” said Dr. Scott D. Solomon, a professor of medicine at Harvard Medical School and a senior physician at Brigham and Women’s Hospital in Boston, who led the research. He explained that the study is the first to fully evaluate the link between mutations in the gene mainly responsible for absorbing glucose in the gut—SGLT-1, or sodium glucose co-transporter-1—and cardiometabolic disease.

People who have the natural gene mutation appear to have an advantage when it comes to diet, Solomon noted. Those who eat a high-carbohydrate diet and have this mutation will absorb less glucose than those without the mutation. A high-carbohydrate diet includes such foods as pasta, breads, cookies and sugar-sweetened beverages.

In the study, the researchers analyzed the relationship between SGLT-1 mutations and cardiometabolic disease using genetic data obtained from 8,478 participants in the Atherosclerosis Risk in Communities study. The study was a 25-year-long observational trial of atherosclerosis and cardiovascular risk factors in people living in four U.S. communities.

The researchers found that about 6 percent of the subjects carried a mutation in SGLT-1 that causes limited impairment of glucose absorption. Individuals with this mutation had a lower incidence of type 2 diabetes, were less obese, had a lower incidence of heart failure and had a lower mortality rate when compared to those without the mutation, even after adjusting for dietary intake (including total calories, sodium and sugars).

Based on these findings, the scientists suggest that selectively blocking the SGLT-1 receptor could provide a way to slow down glucose uptake to prevent or treat cardiometabolic disease and its consequences.

They caution that development of such targeted drugs could take years and that clinical trials are still needed to determine whether the drugs reduce the incidence of diabetes and heart failure and improve lifespan.

## BRANSONS REUNITE

## Second Brother's Retirement Ends Era at NIH

BY RICH MCMANUS

For the past 30 years at NIH, if you needed photos taken by medical arts, chances are you got one of The Brothers—Bill or Ernie Branson.

Bill, the more extroverted of the two, retired last year after 33 years on campus and is now NIH photographer emeritus, a position created within the Office of NIH History. Ernie, the quieter brother, ended a 40-plus-year government career in September. He now joins Bill as photographer emeritus; the two have an office in Bldg. 60 where they help archive NIH's vast store of images—many of which they took.



Ernie Branson

PHOTO: CHIA-CHI CHARLIE CHANG

“Ernie is a stand-out,” said NIH director Dr. Francis Collins. “I always knew things were under control when I saw that he or Bill were on the scene. Photographs are such an important part of telling the NIH story and

Ernie played a key role in helping us do that. In fact, Ernie and Bill received an NIH Director's Award in 2010, to recognize their exceptional service. Just for fun, as they were on stage to receive the award, all of the institute directors jumped up and took pictures of them. I'm glad to know Ernie is staying on with Bill as a volunteer. That way, we won't lose his deep knowledge of NIH or his wonderful sense of humor.”

Adds Dr. Michael Gottesman, NIH deputy director for intramural research: “Ernie has been, ironically, the most invisible visible member of the NIH community, someone responsible for so many of our family snapshots but never appearing in the photo album because he was the one taking the pictures. This is why I am thrilled to announce that Ernie will be given the title of NIH photographer emeritus, where he will join his brother Bill in the Office of NIH History and can remain a visible presence on the NIH campus for many years to come.”

“The team is back together! It's gonna be great,” said Ernie, as retirement neared. “When we're together, it's just right.”

Known for their quick, non-invasive style and technical skill, The Brothers were also renowned as easy—and downright fun—to work with. Many NIH'ers hired them during off-hours to photograph their weddings and bar/bat mitzvahs.

Though at 66, Ernie is 5 years younger than his

brother, he actually began working in medical arts at NIH 4 years earlier than Bill, who arrived in 1984.

The boys grew up in Bethesda, not far from NIH, and their dad worked for Pepco for 45 years. When it came time for college, Ernie had to pay his own way.

In order to afford tuition at Montgomery College, where he studied civil engineering, Ernie got a job as a stay-in-school at NIH. The year was 1972.

Asked what he'd like to do here, Ernie, who had been a gas station attendant and lawn cutter as a teen, admitted he didn't know. “I just wanted to work and get paid.”

He was put to work at NCI, cleaning cages for rodents and rabbits. It was indoor work with no hot radiators or searing sun and Ernie loved it. “It was the best job I had in my life.”

Ironically, it was his mowing work that had introduced him to NIH. “One of my customers was Mr. Black, who worked at the blind stand in Bldg. 10. He put me to work cleaning the store refrigerator and let me eat all the candy I wanted. I loved it.”

As a cage washer, Ernie reported to a Roosevelt Ingram on the 8B level of Bldg. 10. Ernie was good at math, and in his free time tutored Ingram, who was trying to better his employment. Ingram introduced Ernie to a client, Cecil Lee, who ran an EM microscope and kept hamsters whose cages needed cleaning. Lee also had a darkroom.

“[Lee] liked me and we hit it off and had fun,” Ernie recalls. “He asked if I had a camera.”

Bill, when in Vietnam, had sent Ernie one. Lee showed Ernie how to load it, use an enlarger and make his way around the sinks and chemicals of the darkroom.

“The seed was planted there,” said Ernie.

Lee not only taught Ernie the ropes of photography, but also introduced him to a second mentor—Ralph Iseburg, a legendary, one-eyed NIH photographer whose career here spanned 50 years; his darkroom on the B2 level of Bldg. 10, once a morgue, still bears his name today.

But after only 4 months at NIH, Ernie got drafted.

“I wasn't in the mood to go,” recalls Ernie. “I had a girlfriend, I was having fun, all my buddies were here, we were seeing Jimi Hendrix at Merriweather Post Pavilion...”

But his dad had been a pilot in World War II, and Bill was by then a Vietnam vet. Ernie realized, “Ya gotta go, dude.”

Fortunately, Ernie's 2-year Army hitch went



The Branson brothers, Bill and Ernie, joke in their Bldg. 10 studio, where they juggled NIH photo assignments for decades.

PHOTO: ROGER GLASS

only as far toward Southeast Asia as Hawaii, where he learned to aim howitzers as a fire direction coordinator. And at the bases where he trained, he also took photography classes, for future employability.

By the time he re-enrolled at MC in fall 1974, the school offered a photography major. Ernie graduated in 1976 with an associate's degree in photography.

Tuition money was still an issue, so to complete an undergraduate degree, Ernie enrolled at Southern Illinois University in Carbondale. The reason was simple: “I could afford it—you could get Illinois residency in 3 months.

“They took all my credits [from MC] except slide rule class. By then those were antiquated—everyone had a calculator. SIU had a wonderful photography department, offering both professional and fine art training; most schools only offer fine art,” said Ernie. He went pro and in 2 years had a B.A.

During that time, he had persuaded Bill to join him at SIU; the two shared a 2-bedroom trailer that Bill had bought from a migrant farm worker. “That was wonderful living,” Ernie recalls. He slept behind



Turning the tables. Ernie (l) and Bill Branson accept an NIH Director's Award in 2010 as the IC directors and NIH director Dr. Francis Collins (r) playfully snap photos of the brothers.

PHOTO: MICHAEL SPENCER

a sofa in the living room; they had converted the second bedroom to a darkroom.

Ernie picked up additional camera experience working for the school paper, the *Daily Egyptian*. Both brothers also had internships that ripened into paying jobs at the *Southern Illinoisan*, a daily in Carbondale. Interestingly, Ernie had turned down an internship at the Carter White House—"I would have lost a semester and I didn't like grip-and-grins."

His first paid newspaper assignment was a Charlie Daniels Band concert at the DuQuoin State Fairgrounds. "I stood right in front of a speaker to get some stage shots—that's probably why I'm deaf in one ear," he laughs. "I thought, 'Man, I like this!' It was real exciting work."

But small-town newspapers don't pay much and Ernie was restless. "I thought, 'I'm so tired of being poor—I've got to get to work.'"

While Bill stayed on in Carbondale for his M.F.A. in photography, Ernie came home to Bethesda, working a series of odd jobs and living at home.

While seeking a government job at NIH, Ernie's old friendship with Cecil Lee paid off once more.

"I met a Mr. Singletary [in medical arts]," Ernie recalls, "and he wanted to hire me." Lee had introduced Ernie to Singletary years earlier and Singletary remembered him.

In June 1980, Ernie joined the photography section of medical arts, but not to take pictures. He was given darkroom work and back-of-the-house jobs preparing slides for scientific presentations. The dues-paying lasted 4 years.

Frustrated by the lack of camera work, Ernie took a job as an ophthalmic photographer for NEI that lasted 4 more years.

"It was a job," Ernie recalls.

Then came what Ernie calls "the hardest thing I ever did in my life." Both he and Bill were finalists for a single job as NIH photographer.

"By then I had three kids, and Bill was a bachelor who didn't have a job, so I took my name out of the hat for Bill. Back to the ophthalmic world I went. But Bill did such a good job during the next year that they offered me the next available opening."

Around 1988, The Brothers were reunited in medical arts. "Bill and I just took off from there," says Ernie. "It just turned into a perfect team."

Memorable assignments over the past 30 years included visits to NIH by every President going back to Jimmy Carter, events involving such celebrities as the Dalai Lama, Prince Charles and Mary Tyler Moore, the ACT UP demonstration of May 1990 (Ernie had been told not to cover it, but did anyway) and at least three decades of Camp Fantastic coverage.

Of the Bransons' longevity, Ernie thinks that successive generations of NIH leadership appreciated the fact that they "got in and got out—that's what they loved about the brothers. They have a job to do and so do we. The brothers didn't belabor things.

"I feel so blessed," Ernie concludes. "Many of our clients said they wished they had our jobs. It was hard work, but boy, what a great place to be."

Have a question about some aspect of working at NIH? You can post anonymous queries at <https://nihrecord.nih.gov/> (click on the Feedback tab) and we'll try to provide answers.

**Feedback:** Once again, there is fencing up between Bldg. 12 and Center Dr. What is the nature of this construction project and how long will it take? Would it be possible to keep the sidewalk along Center Dr. open this time? In the past, projects at this location have taken many months, requiring many pedestrians to cross the road twice, which is dangerous.



The sidewalk along Center Dr. (above) will remain open during the duration of the construction. Those exiting Bldg. 12A (below) near the construction site will, for safety reasons, detour around the work area.

PHOTOS: DANIEL MOSES



**Response from the Office of Research Facilities:**

This project will replace the steam lines to Bldgs. 22, 12A and 12B. These lines have experienced multiple failures in recent years and visual examination of piping confirmed they need to be replaced. Replacement of the steam line should provide a new lifespan good for the next 40-50 years. This project also relocates a manhole to improve access and waterproofing and solves the problem of steam coming into Bldg. 12A when there is excessive ground moisture, such as after a heavy rain. ORF anticipates the project to be complete by April 2019. The sidewalk along Center Dr. will remain open during the duration of the construction. Those exiting Bldg. 12A near the construction site will, for safety reasons, encounter a slight detour around the work area.

**Alumnus Ganaway Mourned**

Dr. James R. Ganaway, who retired after 33 years of federal service in the summer of 1984 as NIH's principal expert on naturally occurring infectious diseases of laboratory animals, died Oct. 4 at age 91 in Lewes, Del.

Ganaway's NIH career began in 1961 when he became chief of the microbiology unit, comparative pathology section, Veterinary Resources Branch, Division of Research Services. He was also a veterinary director in the PHS Commissioned Corps.

Ganaway received his D.V.M. from the University of Missouri in 1953; he had served in the U.S. Army 1944-1947. He began veterinary and public health practice as a commissioned officer in the Air Force, 1953-1961, and during that period he earned an M.P.H. degree in 1958 at Johns Hopkins School of Hygiene and Public Health. He then began his career in diagnostic and research laboratory work at the Armed Forces Institute of Pathology before joining NIH.

After his retirement from NIH and the PHS, Ganaway spent 3 years at Microbiological Associates, Inc., as director of veterinary medicine.

Ganaway was a member of numerous academic fraternities and veterinary medical associations, authored more than 41 peer-reviewed papers in medical journals and chapters in books and made many presentations at national and international scientific meetings. He received the PHS Commendation Medal in 1980, and the Charles A. Griffin Award—the oldest award given by the American Association for Laboratory Animal Science—in 1984 "for outstanding accomplishments in the improvement of the care and quality of animals used in biologic and medical research."

Ganaway is survived by a brother and sister, 3 daughters, 9 grandchildren and 12 great-grandchildren.



Dr. James R. Ganaway



The six NIH scientists elected to the National Academy of Medicine in 2018 are (from l) Dr. Yasmine Belkaid, Dr. William A. Gahl, Dr. Joshua A. Gordon, Dr. Steven M. Holland, Dr. Ellen Leibenluft and Dr. Charles N. Rotimi.

## NAM Elects Six from NIH

Six NIH scientists are among 85 new members elected to the National Academy of Medicine. Election to the academy is considered one of the highest honors in the fields of health and medicine and recognizes individuals who have demonstrated outstanding professional achievement and commitment to service.

The new NIH members and their citations are:

Dr. Yasmine Belkaid, director, microbiome program, and chief, metaorganism immunology section, National Institute of Allergy and Infectious Diseases, "For defining fundamental mechanisms that regulate tissue immunity and [uncovering] key roles for the commensal microbiota and dietary factors in the maintenance of tissue immunity and protection to pathogens."

Dr. William A. Gahl, senior investigator, Medical Genetics Branch, and clinical director, National Human Genome Research Institute, "For contributions that include creating the Undiagnosed Diseases Program within intramural NIH to meld individualized patient care with next-generation sequencing and to provide insights into new

mechanisms of disease; spearheading expansion to the national Undiagnosed Diseases Network and the Undiagnosed Disease Network International; and championing the sharing of genetic databases and best practices."

Dr. Joshua A. Gordon, director, National Institute of Mental Health, "For research demonstrating how distant brain regions cooperate and coordinate their activity in order to guide behavior, and how this coordination is disrupted in experimental systems relevant to psychiatric disorders."

Dr. Steven M. Holland, NIH distinguished investigator, director, Division of Intramural Research, and chief, immunopathogenesis section, Laboratory of Clinical Immunology and Microbiology, National Institute of Allergy and Infectious Diseases, "For distinguished achievements in primary immunodeficiencies and infectious diseases, including the recognition, treatment, genomic identification and cure of previously unexplained diseases as well as the identification and characterization of novel pathogens in those diseases."

Dr. Ellen Leibenluft, senior investigator, National Institute of Mental Health, "For highlighting the

need to carefully evaluate children who may have bipolar disorder; identifying chronic irritability, a new clinical problem which differs from pediatric bipolar disorder; and pioneering the use of cognitive neuroscience to address fundamental clinical questions on nosology and treatment of pediatric mental disorders."

Dr. Charles N. Rotimi, chief and senior investigator, Metabolic, Cardiovascular, and Inflammatory Disease Genomics Branch, and director, Center for Research on Genomics and Global Health, National Human Genome Research Institute, "For groundbreaking research in African and African ancestry populations, providing new insights into the genetic and environmental contributors to a variety of important clinical conditions, as well as health disparities locally and globally."

Established originally as the Institute of Medicine in 1970 by the National Academy of Sciences, the National Academy of Medicine addresses critical issues in health, science, medicine and related policy and inspires positive actions across sectors. With their election, NAM members make a commitment to volunteer their service in National Academies activities.

## Interns Look Back on Their Summer @NIAMS

Gratitude was the predominant sentiment expressed by the 2018 summer interns, as they looked back on their experiences working at NIH under the mentorship of top scientists in the NIAMS intramural research program. This past summer, 16 students from universities across the United States participated in this competitive program. Each student received hands-on training and sampled what it is like to work at NIH by attending lectures, seminars and symposia. Some also shadowed clinical staff and all conducted basic and translational research, making their time at NIH truly memorable.

"[The program] really helped to reinforce my interests in the intersections between science and medicine," said Dorian Frazier, a returning intern from the University of Maryland.

"Everyone in my lab and in the institute has been immensely supportive in helping me grow as a scientist by teaching and advising me on the



2018 NIAMS summer interns with (front, starting third from l) Dr. Stephen Katz, NIAMS director; Dr. Robert H. Carter, deputy director; and Gahan Breithaupt, executive officer. Also shown are Dr. Stephanie Mathews (back, l), scientific program manager, Career Development and Outreach Branch, and Dr. Robert C. Walker (back, r), chief of the branch.

journey to become a biomedical researcher," said Talia Solomon, a student from Carnegie Mellon University.

The NIAMS Summer Research Program provides

outstanding training opportunities for high school, undergraduate, graduate and medical students. Students can apply online at <https://www.training.nih.gov/programs/sip>. The application for summer 2019 will be available in mid-November. **R**